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ABSTRACT

This research update begins with a review of research on adolescent drug use and its prevention. The research reviewed illustrates the complexity of the problem and of the many variables that may affect outcome. The review suggests that a social influences approach to drug prevention that focuses on preventing the initiation of use by reducing the influence of peer pressure will have limited effectiveness by itself, especially with alcohol. It suggests that more attention must be given to problem users and to reducing underlying behavioral problems, and that prevention efforts must begin earlier than junior high school. It notes that prevention efforts effective for one drug may not be effective for another and that prevention of alcohol drinking among adolescents poses a whole set of different problems from tobacco or illicit drug use. Finally, the research reviewed suggests that school-based programs rooted in psychosocial principles can be successful, and that credible information dissemination can have a positive impact. Broader action on the community level is urged. Following the review are abstracts of 12 studies, all published in 1988, which deal with the evaluation of curricula and school-based drug prevention programs, correlates and consequences of adolescent drug use, or surveys of attitudes and perceptions concerning drug use. Abstracts are arranged alphabetically by the first author's last name. Studies abstracted appear in boldface type in the review section of the report. References to other documents cited in the review follow the abstracts. (NB)

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Prevention Research Update

Number One / Fall 1988

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Prevention Research Update

No. 1 / Fall 1988

Prevention Research Update is a quarterly current awareness service, prepared by the Western Center for Drug-Free Schools And Communities, which summarizes recent research on adolescent drug abuse and its prevention. Each issue abstracts and reviews the implications of new research dealing with a major topic of concern in the field, placing the new information in the context of past findings. The goal is to help bridge the communications gap between the researcher, the practitioner, and the general population, disseminating research findings in an accessible manner and providing an introductory review of their significance. Abstracts are arranged alphabetically by first author's last name. Preceding the abstracts is a review discussion in which studies abstracted are cited in boldface. References to other documents cited are located following the abstracts. Copies are available from all the Western Center sites, which also maintain reprints of the articles summarized.

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PREVENTION GOALS, METHODS, AND OUTCOMES

INTRODUCTION

The research reviewed here illustrates the complexity of adolescent drug abuse and its prevention, particularly the many variables that may effect outcome. Taken as a whole, it indicates that a social influences approach that focuses on preventing the initiation of use by reducing the influence of peer pressure, the "just say no" approach, will have limited effectiveness by itself, especially with alcohol. Much more attention must be directed toward problem users and reducing underlying behavioral problems. Further, prevention efforts must begin earlier than junior high if we are to effectively counter peer pressure manifests and deal with the behavioral problems which are associated with later drug abuse. It also appears that prevention efforts which are effective for one drug may not be effective for another and that prevention of alcohol drinking among adolescents poses a whole set of different problems from tobacco or illicit drug use. Finally, the research provides some hope that school-based programs rooted in sound psychosocial principles can be successful, and that credible information dissemination can also have a positive impact. However, without broader action on the community level, any school-based prevention effort will have limited impact. School-based programs are necessary, but are not sufficient in themselves to counter all the powerful forces promoting drug use.

OVERVIEW

In subject matter, the twelve studies reviewed in this initial update, all published in 1988, can be grouped into three broad areas. Six studies deal with the evaluation of curricula and school-based programs (Beaulieu and Jason 1988; Bonaguro, Rhonehouse, and Bonaguro 1988; Bruvold 1988; Hansen, Malotte, and Fielding 1988; Hopkins et al. 1988; Mauss et al. 1988). Four studies discuss correlates and consequences of adolescent drug use (Bachman et al. 1988; Block, Block, and Keyes 1988; Kleinman et al. 1988; Newcomb and Bentler 1988). Finally, two are surveys of attitudes and perceptions (Moskowitz and Jones 1988; Pisano and Rooney 1988). Although dealing with a wide range of topics, the authors all concern themselves with the goals of prevention and the most effective means to achieve them.

By the end of the 1970s, education efforts, largely informational or affective in orientation, were viewed as ineffective (see Kinder, Pape, and Walfish 1980; Schaps et al. 1981; Moskowitz 1983). During the 1980s, there developed a new generation of prevention programs largely based on techniques used in antismoking campaigns (Glynn, Leukefeld, and Ludford 1983; Bell and Battjes 1985; Tobler 1986). Furthermore, more attention came to be focused on school-based programs as the most effective way to prevent the growing level of adolescent drug use (Polich et al. 1984). These new programs are characterized by, among other features, a minimizing of information dissemination for its own sake and a focus on promotion of abstinence by teaching techniques for resisting peer pressure to use drugs. The research of Denise Kandel, among others, has shown peer pressure to be one of the most powerful factors affecting illicit drug use among youths. In the belief that it is not enough to learn just refusal skills, this social inoculation or resistance approach was also expanded into a broader effort to teach youths other personal and social skills (e.g., coping, anxiety reduction, problem-solving, decision-making) (Botvin and Wills 1985). Program advocates argue that this will reduce potential use motivations and make it less likely that youth will turn to drugs. Yet the field of prevention is still in its infancy and evaluations of school-based programs still have produced mixed results, especially regarding alcohol (**Bruvold 1988;** Goodstadt 1987:31). The school administrators surveyed by **Moskowitz and Jones** did not believe that drug abuse prevention programs were having any impact, although they did see positive results from stiffer school policies and enforcement. **Bonagura, Rhonehouse, and Bonagura et al.,** in fact, warn that if program effectiveness is not increased, disillusionment may step in and destroy the field. Part of the problem is that there still exists considerable ambiguity and confusion regarding prevention goals and methods (Hawkins, Lishner, and Catalano 1985; Jessor 1985). The findings of the research reviewed here address such critical issues as which groups and behaviors should be targeted, whether the same techniques are equally effective for all substances, the effectiveness of information dissemination, and at what age prevention efforts should begin.

TARGET POPULATION. Are prevention efforts best targeted at the general adolescent population, with the goal of avoiding any use (primary prevention), or at high-risk groups and/or experimenters, to prevent them from becoming heavy users or abusers? Primary prevention and abstinence have been the main focus of efforts directed at illicit drugs in the 1980s, in the belief that any drug use in adolescence is undesirable given the developmental challenges of the period and, therefore, that prevention efforts should be targeted at

teaching all adolescents how to "just say no" to drugs. Adding strength to this position has been the research of Kandel and colleagues indicating a sequencing of adolescent drug use beginning with tobacco, alcohol, and marijuana (Kandel, Kessler, and Margulles 1978). These "gateway" drugs pose the greatest risk and open the way for, although not necessarily causing, the use of other illicit drugs. Thus, it is argued, preventing their use reduces the level of the overall problem. Kandel and Yamaguchi (1985) believe that prevention efforts will be more effective if targeted at reducing the risk of initiation than reducing use among users. Similar views are voiced by Polich et al. (1984).

Others stress the importance of distinguishing between use and problem use or abuse, noting that some experimentation should be expected because it is typical and normative in a statistical sense, that experimenters or occasional users are a distinctly different population than heavy users, and that the majority of users do not become abusers (Jessor and Jessor 1977; Huba and Bentler 1979; Baumrid 1985). Therefore, the goal should be to prevent experimentation from becoming regular use or abuse. In response to concerns about any use of gateway drugs, Richard Jessor (1985:260) speculates that drug sequencing could be more driven by heavy involvement than just prior use. Donovan and Jessor (1985) found that excessive alcohol use indicated a higher level of problem behaviors and involvement with other illicit drugs than did marijuana use or low levels of alcohol use. Jones and Battjes (1985:77) express concern that programs focusing on prevention of use may fail to engage those already using and the U.S. Department of Education (1987:27) has noted the apparent failure of many prevention strategies to reach those youth who are most at risk. Similarly, the U.S. Department of Health and Human Services (1987:42) noted that "more narrowly focused social inoculation/refusal skills programs may only be effective with adolescents who are already moderately socially competent and, as a result, at initially lower risk of becoming substance abusers." Winick (1985:521) also has complained about the "substantial waste" of prevention programs "because they are too generalized and not targeted to specific groups."

Certain risk factors are more common among heavy users than others (Hawkins, Lishner, and Catalano 1985). **Kleinman et al.** and **Newcomb and Bentler** reveal the heavy consequences of adolescent drug use in both the short- and long-term, but they also show that drug users and abusers are distinct populations. **Kleinman et al.** studied the extent to which daily marijuana-using adolescents could be distinguished from other students and stand out as problem prone. They found that whether an adolescent had ever used an illicit drug was clearly related to school problems, which suggests that the mere initiation of illicit drug use is related to vulnerability to school problems. However, daily marijuana users were clearly distinct from all others: the heavier the marijuana use, the more likely students were to be truant, to spend little time on homework, and to have poor grades. Furthermore, among heavy users the association between marijuana and school problems was less related to qualities or attributes intrinsic to the drug itself than the fact that marijuana use was one element in a large and complex picture of interrelated problems and behaviors.

Baumrind (1985:31) has suggested that more attention be directed toward the consequences of use: "Since the great majority of youth do not progress up the ladder from the initial step. . . Our concern might more appropriately be with establishing the steps or levels at which harmful *consequences* become evident and with identifying the kinds of potential users likely to proceed beyond that level." The research of **Newcomb and Bentler** at UCLA on the long-term psychosocial consequences of adolescent drug use lends support to those who argue that more attention should be directed toward problem users. They found that heavier drug use, but not infrequent or experimental, impaired nearly every aspect of personal, social, and career development. (They also found that frequent users were, in many respects, more socially mature, a phenomenon that they label "precocious development.") As most teens were not heavy users and many didn't use drugs at all, Newcomb and Bentler suggest that the current focus on primary prevention needs to be expanded and that instead of focusing so much attention on thwarting first-time use it would be more effective to reduce regular use or abuse and deal with those who develop a drug lifestyle. These findings are consistent with those of the two other major longitudinal studies of the psychosocial consequences of adolescent drug use: Halikas et al. (1983) and Kandel et al. (1986).

That regular use is a greater problem than experimental use is further suggested by **Moskowitz and Jones,** who note that trends in perceived seriousness of drug problems in schools over the 1980s paralleled trends in 30-day prevalence rate. In a prospective 10-year survey, **Block, Block, and Keyes** found that character structure in nursery school years significantly foreshadowed subsequent adolescent drug use. This study is one of the relatively few to examine early high-risk determinants (Hawkins, Lishner, and Catalano 1985).

These findings support growing evidence that the etiologies (causes) of experimental, regular, and habitual use are different and may require different prevention strategies and that those who are at risk may be those who use for reasons other than social influences, such as peer pressure (see Robins and Przybeck 1985; Hawkins, Lishner, and Catalano 1985:77).

TARGET BEHAVIORS. A related issue is whether the target should just be drug abuse itself or also the behavioral problems that underly it. One of the defining differences between the social influences and social skills approaches is that the former focuses on inoculating students from influences to use drugs, specifically peer pressure, whereas the latter, although usually including a social resistance component, seeks to promote broad-based personality change, which may have the advantage of affecting a wide range of problem behaviors. Problem behavior theory, developed by Richard Jessor, argues that similar antecedent variables foster a wide range of adolescent problem behaviors, including drug use. This would suggest the value of the social skills approach in the long term. The **Block**, **Kleinman**, **Newcomb and Bentler**, **Mauss**, and **Hopkins** studies all stress that drug abuse is only part of a broad spectrum of problem behavior, which generally precedes drug use itself, and that prevention efforts need to address the underlying motivations for all these behaviors. Explicitly or implicitly, they criticize a prevention approach focused only on resistance to peer pressure to use drugs.

However, **Hopkins et al**. found that the broad personality changes attempted by the Here's Looking at You (HLAY) curriculum did not affect use patterns and stress that such goals are extremely difficult to achieve. The research of Beaulieu and Jason indicates that improving social skills may not always result in changes in drug use. They found significant knowledge and social skills improvements among black 7th graders after an 8-week skills- and peer-oriented substance abuse prevention program, but little change in drug use. This may have been due to methodological problems in assessment or because the students in their sample used very little drugs to begin with. This points to the need for more longitudinal followup to determine the curriculum's impact in the long term. But, on the whole, they found that the combination of information, decision-making, and problem-solving strategies did have promise. This study is also signifiant for being one of the few that specifically concerned black adolescents.

In regard to problem behavior theory, Moskowitz and Jones found a dichotomy between the perception by school administrators, of the extent of drug problems and other problems but the meaning of this is unclear.

TARGET SUBSTANCE. Drugs differ in their pharmacology and effects, their production and distribution, their roles in society, the etiology and context of use, and societal attitudes and responses towards them. Thus **Newcomb and Bentler** found that different drugs were related to different negative outcomes and recommend this information be incorporated into prevention programs. Kandel and colleagues have found not only clear-cut development steps and sequences in drug use but also that different antecedent variables are associated with different stages of use (Kandel and Andrews 1978; Kandel, Kessler, and Margulies 1978; Kandel and Faust 1975). This suggests that prevention efforts might be best focused on initial gateway drugs and the precipitating factors that promote their specific use. As Polich et al. (1984:133) argue: "The literature...implies the need for prevention techniques tailored to specific drugs. The most influential beliefs and norms preceding drug use are those specific to a particular substance."

Yet problem behavior theory implies that similar strategies might be effective for all substances and the seriousness of multiple drug use would suggest the value of a generic approach. Numerous attempts have been made to apply concepts and strategies specifically developed for one substance to another substance, in particular, strategies originally developed for, and seemingly effective in, preventing cigarette smoking among adolescents (Bell and Battjes 1985). Indeed, the anti-smoking programs are the only widely acknowledge success stories in the field. However, the techniques used in these programs have yet to be as successful in preventing the use of other substances than cigarettes. This has led the U.S. Department of Education (1987:25-26) to suggest "that further consideration must be given to the factors underlying the use of specific substances to which a given prevention program is directed. Although some prevention strategies may be 'generic,' others may turn out to be highly substance-specific in their effects."

It would appear the potential effectiveness of any curriculum is a function of the substance addressed and that strategies found successful against smoking do not necessarily transfer to other drugs (US DHHS 1987:49; US GAO 1987:43; Moskowitz 1988). This is especially evident in regard to alcohol, the preeminent drug of choice for youth (Welte and Barnes 1985), among whom the national household and high school senior surveys indicate that current use is equal to the combined use of cigarettes, marijuana, inhalants, and cocaine. Alcohol education clearly presents special difficulties (Hansen 1988). As **Bruvold** notes, alcohol

education evaluations have produced decidedly mixed results. Polich et al. (1984:xvi) concluded that "no presently available approach to alcohol prevention appears to warrant major investments." This lack of effectiveness is reflected in the perceptions of school administrators that problems with alcohol use have not decreased like problems associated with illicit drug use (**Moskowitz and Jones**), as well as the lack of significant changes on the national level in use prevalence and attitudes, despite the expansion of alcohol prevention efforts.

In the studies reviewed here, **Hansen, Malotte, and Fielding** found the Tobacco and Alcohol Prevention Program (TAPP) program effective with tobacco but not alcohol. **Hopkins et al.** found little impact on subsequent alcohol use by the popular HLAY curriculum, even though it "was solidly based in contemporary ideas about alcohol education." (HLAY has since been revised twice; see also Swisher, Nesselroade, and Tatanish 1985.) Furthermore, they observe that "the same basic conclusion has emerged repeatedly in evaluations of school-based programs built on similar premises and assumptions" (e.g., Schaps et al. 1986; Goodstadt 1986a, 1986b).

Among the factors contributing to these mixed results is undoubtedly the lack of consensus in our society in regard to alcohol use (Polich et al 1984:xvi, 123) and the most appropriate goal of alcohol education (Braucht and Braucht 1984). Reflecting this uncertainty, many more smoking prevention programs for adolescents have been carried out than alcohol programs (Wallack and Corbett 1988). The **Hansen** and **Hopkins/Mauss** studies indicate that the goals of alcohol education programs may be too complex, although each reaches this conclusion for different reasons. The former speculates that social inoculation programs that focus on countering peer pressure may not be as effective with alcohol as with tobacco or other drugs because peer pressure is not as great an etiological factor. The latter question whether the curricular variables in the HLAY program (knowledge, attitudes, decision-making, self-esteem) are too limited in their influence because they are only implemented in the classroom and after other important influences are already in place which are not subject to classroom change. **Hopkins** and **Mauss** stress the need for a broader community approach, as do Lohrman and Fors (1986) and Wallack and Corbett (1987).

Similar to the Hopkins' study, Schlegal, Manske, and Page (1984), in a strongly designed evaluation, found that the values clarification and decision-making components of a 3-hour alcohol education program for 8th graders had no effect and may have undermined the positive effect of the knowledge/attitudes component. Gilbert Botvin's "Life Skills Training" program, a 20-hour peer-led, multisubstance social skills program incorporating most of the components of the smoking-prevention programs, has demonstrated some success in delaying marijuana use and, to a lesser extent, heavy alcohol drinking. Students who had been in a peer-led program reported drinking significantly less on each drinking occasion than those who had been in teacher-led programs and those who had not been in the program at all (Botvin 1984a, 1984b). Moskowitz (1988:43) observes that the reasons the classroom teachers were unsuccessful in producing student behavior change is somewhat puzzling because teachers were successful in earlier studies of this program (Botvin and Wills 1985). Although this research also has its methodological problems, it would appear to provide tentative support for the broad spectrum psychosocial strategy.

Part of the problem is that research on the etiology of substance-related problems among adolescents is far less advanced for alcohol than for other drugs (Murry and Perry 1985). The issue of peer influences in alcohol use, and their implications for social inoculation prevention approaches, especially warrants further research. Although **Hansen, Malotte, and Fielding** question the relative importance of peer pressure, **Pisano and Rooney** advocate that alcohol education efforts need to begin before the 7th grade, in part because peer pressure begins to become more forceful then. Relevant to this issue, **Newcomb and Bentler** found that alcohol differed from all other drugs in regard to social conformity.

Mauss et al. further raise the question of whether the much admired success of tobacco prevention programs may have been misinterpreted, that it was not so much the programs that brought about a reduction in adolescent smoking but changing attitudes and norms within the general community. A similar point has been made by Hawkins, Lishner, and Catalano (1985:99), Lohrman and Fors (1986), and Moskowitz (1983). Along with the disappointing results of school-based alcohol prevention, this suggests that prevention efforts are more likely to be effective in a social milieu unambiguously favoring abstinence among all age groups. Success with other substances besides tobacco may await changes in social climate (Polich et al. 1984; Moskowitz 1988; US DHHS 1987:49; Wallack and Corbett 1988). It may also await new prevention approaches which take into consideration differences in drug effects and use context.

INFORMATION DISSEMINATION. Primary reliance on information dissemination as a means to deter use was discredited by the 1970s and most programs now minimize it (Perry 1987). However, **Bachman et al.**

found evidence that rational communication of information about the adverse effects of drug use, in this case marijuana, can be effective in reducing use. This study is a response to questions raised by Jessor (1985) regarding preliminary speculation by co-author Lloyd Johnston (1985) as to the reasons for the decline in marijuana use among students in the early 1980s. Jessor questioned whether beliefs about the harmfulness of marijuana declined because use was declining, rather than the other way around, and whether the real source of decline in use was just an increase in the general conventionality of adolescents. Previously, Brown and Skiffington (1987) found a decline in use of both marijuana and alcohol among 11th graders in Pennsylvania between 1978-1983, which they also attribute to the "real educational impact" of public information. As noted above, Schlegal, Manske, and Page (1984) found a positive use effect from an alcohol program based on a knowledge/attitudes model.

EARLY INTERVENTION. A final theme that emerges is the need for early intervention, especially with alcohol. **Kleinman et al.** observe that the time to begin prevention efforts is preadolescence or at least before high school, when the problem behavior with which heavy marijuana use is associated has already developed. This, they conclude, will probably be more effective than a focus specifically on illicit drug use in high school. **Block, Block, and Keyes**, in finding that character structure during the nursery school years significantly foreshadows drug use, provide an implicit argument for early intervention. They call for expanding beyond the "just say no" approach to change early behavior likely to place the child/adolescent at risk. **Pisano and Rooney** found such a significant increase in alcohol use approval and peer influences between 5th and 6th grades that they argue that sole reliance on drug and alcohol education curriculum after the 6th grade can not be expected to produce positive results. As Baumrind (1985) observes, the developmental trajectory for experimental, recreational, and habitual drug use may diverge in early elementary school. It also appears that the earlier the onset of use, the greater the subsequent problems, not only for drug use but other types of pathologies (Robins and Przybeck 1985:191; Kandel and Yamaguchi 1985; Jones and Battjes 1985). As Hawkins, Lishner, and Catalono (1985:88) observe, from a developmental perspective, peer influence programs in high school are too late.

ABSTRACTS

Bachman, Jerald G.; Johnston, L.D.; O'Malley, P.; and Humphrey, R. EXPLAINING THE RECENT DECLINE IN MARIJUANA USE: DIFFERENTIATING THE EFFECTS OF PERCEIVED RISKS, DISAPPROVAL, AND GENERAL LIFESTYLE FACTORS. Journal of Health and Social Behavior 29(1):92-112, March 1988.

The National Institute on Drug Abuse's (NIDA) nationwide annual survey of high school seniors has shown a decline in marijuana use from 1979 through 1986. To explore the reasons for this, data from all 11 surveys (1976-1986) were examined. Two alternative explanations for this trend were explored: that young people had become more conservative in general, or that specific changes in views about marijuana had led to the decline in use. The data were drawn from one of the survey questionnaires which deals with beliefs and attitudes about marijuana. For most of the findings reported, the annual sample size was about 3,000.

Findings. The data indicated no support for a conservative shift among youths. A variety of lifestyle factors did account for fully 25 percent of the variance in marijuana use, but controlling for these lifestyle factors had little or no impact on the secular trend in use. It appeared that although individual differences in lifestyle are very important in understanding individual variations in marijuana use, the recent decline in use was not the result of any sort of overall conservative shift. However, more specifically, both perceived risks and personal disapproval of marijuana use had risen sharply since 1978. The data suggested strongly that if there had not been a distinct increased in negative attitudes about marijuana, then there would not have been steadily lower levels of use in each succeeding class since 1979.

Conclusions. It is argued that changes in the social environment, particularly in information about marijuana, led to a trend in perception of risk which led in turn to trends in disapproval and in actual use. The shifting views about risks were a fundamental factor influencing disapproval within self and others. Perception of greater risks provided the basis for disapproval and decreased use.

Scare tactics have been shown to be especially ineffective, particularly when contradicted by personal experiences. However, realistic information about risks and consequences of drug use, communicated by a credible source, can be persuasive and play an important role in reducing demand. Recent reports about health consequences have been balanced, have received good media coverage, and have been based on much more extensive research. The result is that students' observations of friends and classmates have become consonant in recent years with messages from "the system."

Beaulieu, Michelle, and Jason, L. A DRUG ABUSE PREVENTION PROGRAM AIMED AT TEACHING SEVENTH GRADE STUDENTS PROBLEM-SOLVING STRATEGIES. Children and Youth Services Review 10:131-149, 1988.

An eight-week drug abuse (tobacco, alcohol, and marijuana) prevention program for 7th grade students was evaluated in five classrooms from an all black inner-city elementary school. Pre and posttests were given to an experimental group (two classrooms, N=16)) and controls (three classrooms, N=44). The intervention utilized a combination of educational strategies including information-giving, decision-making, and problem-solving techniques, and social competency building skills. In addition, peers (8th graders) were incorporated into the program as helpers and role models. The program consisted of eight sessions of approximately 45 minutes each.

Findings. Those students provided the program showed greater drug knowledge and better problem-solving skills in drug-related situations over time than the controls. In addition, a highly significant positive correlation was found between each of the three drug usage variables.

Conclusions/Implications. The findings suggest that the combination of information, decision-making, and problem-solving strategies is a promising prevention approach for use with black adolescents. Regarding drug usage, there were few meaningful changes, possibly because of methodological issues in assessing use rates or the low levels of usage that was evident for all children, which made it difficult to lower the rates even more. It is noted that a longer-term followup would have allowed the determination of whether the changes noted endured over time. It is also noted that considerable loss of data occurred. (On this study, see also Rhodes and Jason 1987.)

Block, Jack; Block, J.; and Keyes, S. LONGITUDINALLY FORETELLING DRUG USAGE IN ADOLESCENCE: EARLY CHILDHOOD PERSONALITY AND ENVIRONMENTAL PRECURSORS. Child Development 59:336-355, 1988.

The antecedents of drug usage was examined in a prospective study of a nonclinical sample of 14-year-old males (N=51) and females (N=54), who were followed for more than a decade from the ages of three and four and closely assessed on multiple occasions by independent sets of personality assessors and a variety of objective tests. The family context during preschool years was also assessed. The longitudinal analyses began from an appreciably earlier age than has yet been reported, spanned a large number of years, and involved an unusually diverse variety of measures.

Findings. Drug usage in early adolescence (age 14) was related to concurrent and preschool personality characteristics. The personality concomitants and antecedents of drug use differed somewhat as a function of gender and the drug used. At age 14, for both sexes, the use of marijuana was related to ego undercontrol, while the use of harder drugs reflected an absence of ego resiliency, with undercontrol also a contributing factor. At ages 3 and 4, subsequent adolescent drug usage in girls related to both undercontrol and lower ego resiliency. In boys, adolescent drug usage related strongly, during their nursery years, to undercontrol with resiliency having no long-term implications. Early family environment related to adolescent drug usage in girls but not in boys. Drug usage in adolescent girls was related to homes earlier identified as unstructured and laissez-faire, where there was little pressure to achieve. Drug usage related to other substance use and, in boys, to IQ decline from age 11 to 18.

Conclusions/Implications. Whereas the dominant view holds that peer associations are the primary factor placing adolescents at risk, the results indicate that, for both sexes, character structure during the nursery school years significantly foreshadows drug use, although peer groups may be decisive at the moment of choice regarding drug usage. Current social policies need to be broadened beyond the "saying no" emphasis to support intervention efforts that seek to change early behaviors likely to place the child/adolescent at risk.

Bonaguro, John A.; Rhonehouse, M.; and Bonaguro, E. EFFECTIVENESS OF FOUR SCHOOL HEALTH EDUCATION PROJECTS UPON SUBSTANCE USE, SELF-ESTEEM, AND ADOLESCENT STRESS. Health Education Quarterly 15(1):81-92, Spring 1988.

The effectiveness of four school health education projects on substance use, self-esteem, and stress were evaluated. The subjects were 161 adolescents in 5th through 8th grades. All four projects, which are not named, were funded through the Ohio Department of Health. Data collection included pretest-posttest (six weeks later) questionnaires on self-report use of tobacco, alcohol, marijuana, and other drugs. In addition, the Hare Self-Esteem and the Adolescent Stress Symptomology Scales were utilized. Interviews were conducted with project staff about the educational methodology of their intervention.

Findings. The predominant educational method used by the projects was lecture/discussion. There were no significant differences between pretest/posttest questionnaires for frequency of substance use, self-esteem, or stress symptomology.

Conclusions/Implications. The effectiveness of school health education needs improvement. Effective school health education programs need sufficient quantity and quality in order to have an impact on health behaviors and the intermediate health-enhancing variable of self-esteem. Current state standards and funding levels do not assure this. The authors warn that rigorous evaluation is a necessity: "Reliance on 'one-shot' approaches and inadequate program designs to reach desired outcome may create a disillusionment that health education is not effective--a disillusionment that could destroy the field."

Bruvold, William. ISSUES IN ALCOHOL EDUCATION AND RESEARCH Contemporary Drug Problems 15(1):21-29, Spring 1988.

Research recommendations for evaluation of school-based alcohol and tobacco intervention programs are presented. Evaluation research in this area needs to be improved. Eleven previous reviews are cited which point out that substandard methodology has been employed by researchers evaluating prevention or treatment interventions. From these reviews, ten recommendations for improving outcome evaluation studies are distilled. The research which has been conducted has found mixed results: some interventions produced the desired outcome, some produced no effect and some actually produced outcomes in the undesired direction. Little systematic effort has been directed at understanding why some interventions are successful and some are not. A

meta-analysis of evaluation studies might provide theoretical explanation for the differential results obtained and identify which kinds of interventions are most effective while considering the methodological requisites for sound research. (On meta-analysis, see Tobler 1986)

Hansen, William B.; Malotte, C.K.; Fielding, J.E. EVALUATION OF A TOBACCO AND ALCOHOL ABUSE PREVENTION CURRICULUM FOR ADOLESCENTS. Health Education Quarterly 15(1):93-114, Spring 1988.

The administrtion of the Tobacco and Alcohol Prevention Program (TAPP) to 6th and 7th grade students by minimally trained classroom teachers was evaluated. In contrast to an efficacy study, in which an intervention is tested to see if it can work with full and well-controlled implementation, this study was designed as an effectiveness study to determine if the intervention worked with a more naturalistic implementation, that is, where full implementation could not be assured and where varying levels of skill and commitment among the teachers existed.

The program focused on: (1) teaching students to identify and resist peer influences; (2) information about short- and long-term consequences of tobacco and alcohol use; and (3) the correction of normative expectations; and (4) the establishment of conservative intentions regarding tobacco and alcohol use. Peer leaders were utilized and students were encouraged to make public no-use commitments.

Two cohorts of students were pretested and, subsequent to delivery of the program, tracked longitudinally. The first cohort was followed for four years, the second, for three years. Cohort 1 students (N=1221, 66% white), came from two moderate-size school districts in Los Angeles County. Cohort 2 students (N=1707, 54% white), came from one of the districts in Los Angeles and another city which has one of the highest per capita income in the USA.

Findings. TAPP appeared to be partially effective in preventing onset of substance use, but the effect was mediated by several factors, including target behavior and audience and deliverer characteristics. The program reduced the onset and prevalence of tobacco use but not of alcohol use. Compared to no-treatment comparisons, treatment subjects evidenced a 20 percent reduction in the prevalence of smoking by the final postest. No significant effects on alcohol use were observed. This was true for both low and high level use. A post hoc examination of the smoking data indicated that the program effects were differentially related to the school district in which the program was delivered, the student sex, and ethnicity. It was more effective among females than males, whites than minorities, and in some schools than others. Participating school districts differed in socioeconomic makeup and how they implemented the program.

Conclusions/Implications. Prevention program content appears to be only one variable that may affect the effectiveness of prevention interventions. Programming may be differentially effective depending on such factors as to whom and by whom the program is delivered.

It is possible that major differences between alcohol and tobacco were not taken into account in designing the program; specifically, that peer pressure as the mechanism by which use is initiated may be valid only for tobacco, whereas the use of alcohol is much more prevalent in society and its abuse more difficult to define.

Hopkins, Ronald.; Mauss, A.; Kearney, K; and Weishelt, R.. COMPREHENSIVE EVALUATION OF A MODEL ALCOHOL EDUCATION CURRICULUM. Journal of Studies on Alcohol 49(1):38-50, 1988.

An evaluation of the Here's Looking At You (HLAY) alcohol education curriculum was undertaken to determine the effectiveness of those programs designed to enhanced knowledge and self-esteem, instill appropriate attitudes and teach the decision-making skills necessary for youth to make responsible decisions about alcohol use. HLAY was selected because it is a respected, widely utilized curriculum solidly based on contemporary ideas about alcohol education and designed for implementation at all grade levels through 12th grade. It was designed not only to make students knowledgeable about alcohol as a pharmacological agent but also about alcoholism as a social problem. The student is expected to: (1) acquire attitudes favoring abstinence or moderate, licit use, but condemning excessive and illicit uses; (2) gain high self-esteem; and (3) learn to cope intelligently and rationally with life's stresses and problems without resorting to alcohol and other drugs.

The sample included 6808 students (75% white; 50% male) in grades 4 through 12 from five school districts in the Pacific Northwest (one urban and two suburban or rural districts). A quasi-experimental design was used in which variations in curriculum exposure were determined by appropriate selection of participating teachers and classrooms. Experimental and control schools were always in different school-district feeder systems, so cross-contamination between groups would be virtually impossible. The experimental students were pretested and then posttested after conclusion of the curriculum, about a

month later. Longitudinal analyses were based on questionnaires filled out over 2- or 3-year periods. The evaluation included data on the impact of the curriculum on a number of variables thought to mediate adolescent alcohol use and abuse (knowledge, self-esteem, attitudes and decision-making skills), longitudinal data on a variety of measures related to subsequent use and abuse of alcohol, and data regarding the implementation of the curriculum.

Findings. The curriculum was implemented approximately as intended but was ineffective in attaining its goals. The immediate, cumulative, and longer-term effects of curriculum exposure on the mediating variables were modest or unsystematic. There was no consistent evidence of carry over effects from curriculum exposure on subsequent use of alcohol, cigarettes, or other drugs. Longitudinal data showed little evidence of cumulative or long-term effects on mediating variables and no systematic impact on subsequent drinking or other problem behaviors.

Conclusions/Implications. It is doubtful if any other school-based program with a similar conceptual and pedagogical basis would be any more effective. The same basic finding has emerged repeatedly in evaluations of similar school-based programs. The reasons warrant further research. Such programs "may be addressed at variables that, although theoretically related to alcohol abuse, have small effects compared to those of other sociopsychological influences that are not subject to change in the schools. In this respect, it may be that such a school program must be integrated with a comprehensive and coordinated community-wide prevention effort." It may also be that program goals are simply too complex, especially the "responsible use" goal. "It may be that no society can reasonably expect to single out certain drugs or certain age groups for proscriptive or restrictive policies, while at the same time condoning (or even encouraging) the consumption of alcohol and other drugs in the rest of the population."

Kleinman, Paula; Wish, E.; Deren, S.; and Rainone, G. DAILY MARIJUANA USE AND PROBLEM BEHAVIORS AMONG ADOLESCENTS. International Journal of the Addictions 23(10):87-101, 1988.

A high school survey was conducted to determine the extent to which daily marijuana users are distinct from the larger population of students and from problem-prone persons.

The sample consisted of 903 suburban New York City high school students who attended school drug abuse prevention/early intervention programs. The majority of the schools served relatively affluent, upper-middle-class, white populations. Females were overrepresented (71%). Drug abuse prevention counselors asked each student whom they saw in counselling sessions between November 1984 and May 1985 to complete a 7-page self-administered questionnaire.

Findings. When problem behaviors, the behavior of family and friends, demographic variables, and personality dispositions were examined separately, daily marijuana users were clearly distinct from all others. The heavier the marijuana use, the more likely students were to be truant, to spend little time on homework, and to have poor grades. Daily users were also more likely to be male.

Whether an adolescent had ever used an illicit drug was also clearly related to school problems, which suggests that the mere initiation of illicit drug use is related to vulnerability to current school problems.

But marijuana use accounted for only 32% of the variance in school problems in the regression model. The level of marijuana use did not make a significant independent contribution to school problems when such critical factors are taken into account as lifetime cigarette smoking, lifetime multiple drug use, whether respondent has ever used an illicit drug, rebelliousness, and gender.

Conclusions. Marijuana use was only one element in a large and complex picture of interrelated problems and behaviors. There is reason to believe that other, unmeasured variables, which are probably not directly related to drug use, have an important effect on school problems. Marijuana use is clearly related to school problems, but the association is related to the qualities or attributes that are intrinsic to the drug itself in only a secondary manner. "The primary association is produced by virtue of the fact that marijuana use is one element in a large and complex picture of interrelated problems and behaviors." This suggests that by the time a student enters high school, he or she has already developed the attitudes and behaviors that will cause problems there. Therefore, it would be fruitful to devote resources toward working with preadolescent youngsters, particularly to integrate boys, early smokers, and persons who display antisocial behaviors into conventional school, athletic, and social activities. "It will probably be more effective to attend to problem behaviors in the grade school and even the preschool years than to focus specifically on the use of illicit drugs in high school."

Mauss, Armand.; Hopkins, R.; Weisheit, R.; and Kearney, K. THE PROBLEMATIC PROSPECTS FOR PREVENTION IN THE CLASSROOM: SHOULD ALCOHOL EDUCATION PROGRAMS BE EXPECTED TO REDUCED DRINKING BY YOUTH? Journal of Studies on Alcohol 49(1):51-61, 1988.

The reasons Hopkins et al. (1988) found that the Here's Looking At You (HLAY) program had, at best, very modest immediate or longitudinal effects on the psychosocial variables assumed to mediate drinking behavior were examined using a longitudinal questionnaire survey of junior and senior high-school students. The survey provided measures of variables in three principal sets: (1) curricular variables typically addressed in contemporary alcohol education programs (knowledge, attitudes, decision-making skills and self-esteem); (2) drinking behavior; and (3) noncurricular variables (demographic and social-psychological traits that typically characterize students before they are exposed to alcohol education programs).

Findings. Bivariate analyses suggested that the curricular variables were related to drinking behavior, that contemporary alcohol education programs do address variables that, when considered alone, appear to be related to drinking. However, multivariate analyses indicated that these same variables contributed little to the explanation of adolescent drinking when adjusted for the noncurricular variables, most of which are logically and/or chronologically prior to curriculum exposure.

Conclusions/Implications. These variables made such a small independent contribution to drinking behavior that it is unlikely even a highly successful classroom intervention directed at these variables would do much to prevent alcohol use or abuse by youth. Such programs do not have much "room" to work because they are implemented in a classroom setting and after other important influences are already in place. Thus cognitive, affective and attitudinal variables addressed in classroom-based alcohol education programs "do not show much promise of influence on alcohol or drug abuse."

It is faulty to place a lot of hope for alcohol educational programs in the favorable results obtained by some of the school-based programs against smoking, because cigarette smoking presents quite a different issue. This hope further is misplaced to the extent that it assumes that the efficacy is coming primarily from the program itself, whereas the reductions in youth smoking have all occurred in the context of an adult environment that has been constantly turning against smoking. This supports the conclusion of Hopkins et al. (1988) that we must look "to the broader community (and societal) environment, rather than to the schools.

Moskowitz, Joel, and Jones, R. ALCOHOL AND DRUG PROBLEMS IN THE SCHOOLS: RESULTS OF A NATIONAL SURVEY OF SCHOOL ADMINISTRATORS. Journal of Studies on Alcohol 49(4):299-305, 1988.

A mail survey of public high school administrators in the United States was conducted to gather information about the nature and extent of school problems with student alcohol and drug use from the perspective of the school administrator. The survey was conducted as part of the National High School Alcohol And Drug Policy Study conducted at the Prevention Research Center, Berkeley, California. Out of a national metropolitan probability sample of 728 schools, 543 (75%) returned a completed questionnaire.

Findings. More students now attend public high schools with serious alcohol problems than drug problems. From 1980 to 1985, about one in six students attended schools that reported a serious problem with student alcohol use. In contrast to this relative stability, the proportion of students attending schools with a serious drug problem decreased from about one in four in 1980-1981 to about one in seven in 1984-1985. The trends over time in the perceived seriousness of these problems roughly paralleled the trends in the 30-day prevalence of daily use of alcohol and marijuana as determined by the national high school seniors survey. This suggests that the existence of a serious school problem may be related to the prevalence of frequent users.

Of those schools which reported a decrease in student alcohol or drug problems, the most common explanation provided was changes in the school's discipline policy or increased enforcement of the existing policy, cited by 72 percent. Few respondents (28%) attributed a reduction in student alcohol or drug problems to prevention or treatment programs. More research is required to determine whether these perceptions are accurate and, if so, why these policies were effective.

Most schools that suffered from serious student alcohol problems also appeared to suffer from serious drug problems and vice versa, but such schools did not tend to suffer from other serious student problems. This suggests that substance use tends to be a distinctive school problem, which contrasts with a substantial body of research indicating that all these problems tend to co-vary among individual students.

Newcomb, Michael, and Bentler, Peter. CONSEQUENCES OF ADOLESCENT DRUG USE: IMPACT ON THE LIVES OF YOUNG ADULTS. Newbury Park: Sage Publications, 1988.

To determine the psychosocial consequences of adolescent drug use, 739 youths were tracked from junior high school into young adulthood beginning in 1976 (the original sample consisted of 1634 students, a 45 percent retention rate). The objective was to study the specific effects of frequent drug use as a teenager upon the quality, nature, and success of psychosocial functioning (personal, social, and career development) as a young adult. Determination of physical health consequences of teenage drug use was not examined. All the students originally were located at 11 Los Angeles County schools in five school districts which were roughly representative of schools in the county in terms of socioeconomic status and ethnicity. The results reported were based on 654 subjects who provided data in years 1, 5, and 9 of the study. Participant characteristics were very similar to those of other national surveys of young adults: 70 percent were women and 30 percent, men; 34 percent were from minority backgrounds; and 93 percent were high school graduates. In year 1, when all subjects were in the 7th, 8th, or 9th grade, each indicated the frequency of use for 11 different drug substances on five-point anchored rating scales. In year 5, they provided frequency of use during the past six months for 21 substances on a seven-point scale.

The primary method of analysis was latent-variable structural modeling. The study is the first systematic use of nonstandard linear structural equation models in which the effects of interest were not limited primarily to the "inner" relations among latent variables. In all the analyses, social conformity was routinely included as a construct in order to control for the possible spurious influence of general deviance on the consequences being tested.

Findings. There was a linear relationship between the amount of drug use and the amount of drug damage. Heavy drug use impaired nearly every aspect of personal, social, and career development (relationships, jobs, education, physical, and mental health).

Changes in Drug Use. Frequency of drug use for 26 different psychoactive subjects was assessed in years 5 and 9. There was a strong tendency for those who used drugs in adolescence to continue using drugs as young adults. Significant increases were found for levels of use for cigarettes, caffeine, beer, wine, liquor, amphetamines, non-LSD psychedelics, cocaine, and nonprescription cold medication. Significant decreases in use were evident for marijuana, hashish, minor tranquilizers, barbiturates, sedatives, LSD, inhalants, and PCP. The most dramatic change was in the increase in cocaine use, which was now reported by one-third of the sample, vs. 18 percent in adolescence. However, there was a moderate degree of stability in overall drug use.

Social Conformity. The results corroborated existing research indicating that earlier deviant attitudes increase drug involvement but that earlier drug use does not increase deviant attitudes or behavior, in general, over time. The only drug use consequences apparent were for alcohol, which was related to decreased young adult religious commitment and general social conformity.

Family Formation and Stability. Early drug involvement, and especially hard drug use, led to early marriage and having children, which then often resulted in divorce.

Drug Use and Crime. Teenage drug use changed dispositions and tendencies toward criminal behavior. Drug use increased stealing, involvement with drug-related crimes (e.g., driving under the influence, drug selling and drug possession), assault, and other confrontational acts. Although early drug use significantly affected the frequency of arrests and convictions for drug crime involvement, it did not generalize in a positive direction to other types of crime. Furthermore, drug users were involved in fewer violent crimes (e.g., vandalism; carrying a deadly weapon). This suggests that drug use may become less associated with general deviancy (as reflected in all types of criminal activities) over time.

Sexual Behavior and Involvement. Drug use had few effects on changing sexual behavior and satisfaction, and no effect on use of effective birth control, dating competence, frequency of intercourse, contracting venereal disease, or having abortions. However, drug use was highly associated with early sexual involvement and various types of drugs increased the number of relationships and partners one had in life.

Educational Pursuits. Teenage drug use did not reduce educational aspirations in young adults beyond the lowered levels already evident in adolescence but it did reduce potential progress in education and college attendance. Particularly, use of beer, spirits, and PCP reduced college involvement. Use of hard drugs and cigarettes significantly lowered the chances of graduating from high school. These limitations on higher education may ultimately limit the opportunities available for career advancement and satisfaction with work.

However, the specific use of alcohol as a teenager, apart from general drug use, predicted increased

college involvement, implying that teenagers who only use alcohol and do not make the transition to illicit drugs tend to be more conforming and follow traditional pursuits of a college education.

Career Goals and Income. Many longer-term effects on careers and income were not yet apparent. In fact, teenage drug users earned significantly more money than their nondrug-using peers. Hard drugs and beer made specific contributions to increasing salary from adolescence to young adulthood. This pattern reflects a trajectory of adolescent drug use spurring early involvement in the workforce, which yields immediate salary benefits. This effect on salary is not expected to remain. It occurs because those who used drugs as teenagers were more likely to drop out of high school or not continue in college, and instead begin full-time employment. Once young adults who don't use drugs acquire college training, they should surpass their drug-using peers in income, since they will have received additional training that will raise their earning potential.

Teenage drug use, in particularly hashish, inhalants, stimulants, and marijuana, did reduce job stability into young adulthood. So even though it generated early involvement in work, it also created difficulties in maintaining job performance. The effect of drug use on job stability varied, however, depending on level of drug use.

Teenage drug use generates a life trajectory that is plagued by an inability to maintain gainful employment. Along with the issue of job instability are potential long-range additional consequences, such as low self-esteem. However, it is not yet possible to determine whether the process that creates this instability (i.e., immaturity, drug use on the job, irresponsibility, developmental lags) will continue over time, or whether this trajectory will self-correct and hence not follow throughout life.

On the positive side, teenage drug use did not influence job satisfaction, amount worked, or utilization of public assistance. Thus, it does not create young adults who burden society or rely solely on the government for subsistence.

Mental Health. Drug use had a variety of effects on the emotional development of young adults, with specific drugs producing different effects. Frequent users of many drugs developed disorganized thinking, bizarre thoughts, and unusual beliefs that may ultimately interfere with problem-solving abilities and emotional functioning. Drug use decreased planned behavior and forethought. Drug use did not alter affective states, such as depression or emotional distress.

The use of hard drugs--in particular hypnotics, stimulants, inhalants, and narcotics--generated suicidal ideation and thoughts of self destruction. Hard drug use was a portent for a life trajectory that is plagued by futility, thoughts of suicide, and a belief that one's life would end with self-annihilation. It was not possible, however, to determine if drug use had a tangible effect on actual suicides.

Social Integration. Compounding or reflecting this pattern of self-destruction, hard drug use reduced social support and increased loneliness in young adulthood. It predicted social isolation and deprivation, as well as generated thoughts of futility and self-destruction. On the whole, it appeared that the type of drug use is a critical factor. Adolescent alcohol use seemed to enhance social functioning and integration, just the opposite effect of hard drugs.

Impact of Specific Drugs. General drug use (the tendency to use many different drugs as an adolescent) was found to lead to problems in several areas of life, including livelihood, emotional functioning, criminal involvement, and abandonment of traditional pursuits, such as a college education.

Alcohol consumption appeared to decrease criminal activities and reduce loneliness, while at the same time decreasing traditional pursuits such as college involvement and increasingly early marriage.

The effects of cannabis were substantially those of general drug use, showing the same range of negative impacts on the social psychological functioning of the young adult.

Hard drug use predicted a wide range of dysfunctional outcomes as young adults, producing many significant contributions to interpersonal problems (loneliness and trouble in relationships) and increased feelings of futility, as reflected in the belief that life would end with suicide.

Conclusions. Teenage drug use obviously interferes with various kinds of life functioning, with differential effects for different types of substances. Overall, teenage drug use "both disrupts the timing of, as well as competence with, handling many of the critical developmental tasks of adolescence and adulthood. The timing is affected by generating a premature involvement with many tasks, such as work, sexuality, and family, prior to the acquisition of adequate competence to handle these challenges. On the other hand, teenage drug use directly interferes with social integration and acceptance of adult civic and social responsibilities. Finally, teenage drug use affects cognitive processes (making them more disorganized and bizarre), while somehow reducing the will to live as reflected in increased suicidal ideation (specifically as a result of hard drug use)."

One of the principal effects of drug use was "precocious development" the acceleration of teenager's involvement in adult roles. Drug users left school earlier, started jobs earlier, and formed families earlier. However, moving into adult roles without adult maturity created severe strains on virtually all aspects of a drug user's life. Young drug users divorced more quickly, suffered from greater job instability, committed more serious crimes, and were generally more unhappy in their personal lives and relationships.

Implications. Given the widespread experimentation with drugs among teenagers and the nature of adolescence, it can be argued that not at least trying tobacco, alcohol, and cannabis as an adolescent can be considered unusual and deviate behavior. Therefore, "it would seem that [completely] eliminating the trial use of drugs among teenagers is neither an easy nor a high priority goal." Rather, emphasis should be placed not on simply thwarting first-time use but also on reducing abuse, regular use, and misuse. The focus of prevention efforts should be on "those teenagers who develop a lifestyle of drug use to relieve emotional distress and other life stresses" because it is they who "will suffer long-term, negative consequences of their use." The observed negative effects of teenage drug use were not the result of very occasional or infrequent used. Previous research has indicated that peer influences tend to motivate nonproblematic experimental use. The psychological causes for drug abuse are many and showing that drug use does not solve problems should be one important message of drug prevention programs. Peer pressure that contributes to experimental drug use is only one aspect of the problem. Focusing simply on handling peer pressure, such as the "just say no" approaches, "is an incomplete approach to confronting the task of preventing drug abuse among this nation's youth."

Certain types of drugs are related to specific kinds of negative outcomes. Information regarding such consequences should be incorporated into programs to convey possible eventual results. (p. 236)

Teenage drug use clearly is one component of an integrated lifestyle involving attitudes and other behaviors. "Thus a strict focus on teenage drug use will be too limited for effective prevention or treatment."

Pisano, Samuel, and Rooney, J.F. CHILDREN'S CHANGING ATTITUDES REGARDING ALCOHOL: A CROSS-SECTIONAL STUDY. Journal of Drug Education 18(1):1-11, 1988.

A drug- and alcohol-related questionnaire was completed by 1,829 fourth-, fifth-, and sixth-grade students in 12 public schools in an urban school district in Pennsylvania. Slightly over half the sample were white; the average age was 10.5 years; approximately the same number of students from each grade were surveyed.

Findings. The 6th-grade students were significantly more advanced than the 4th- or 5th-grade students in terms of conformity to peer pressure and positive attitudes toward the use of drugs and alcohol. Alcohol use was very low. Beer and cigarettes were the drugs most frequently consumed. The question regarding the legitimacy of use of beer or wine showed the greatest degree of change across grades: 42 percent of 4th-graders answered positively; 50 percent of 5th graders; and 62 percent of 6th graders said it was okay for people to drink beer or wine. Approval of use of other alcoholic beverages also increased markedly over grades. There were no significant changes in attitudes for either cigarettes or marijuana. Regarding their own probable use, the most significant change occurred between 5th and 6th grades, when significant increases occurred among those who perceived themselves as future users of beer, wine, other alcohol, and cigarettes. There were no significant changes in regard to marijuana. Concomitantly, those who supported no-use declined. Measures of peer pressure showed small but significant increases for all alcoholic beverages and cigarettes, but not marijuana, between 5th and 6th grade.

Conclusions/Implications. Prior to the 6th grade, and continuing on through high school, sole reliance on drug and alcohol education curriculum as a means of dealing with drug and alcohol use will not produce positive results. By secondary school, students' attitudes have shifted and have become too firmly positive for occasional lessons to have any effect and the teacher's influence is weaker than that of peers.

OTHER STUDIES OF INTEREST

Henly, George, and Winters, K. Development of problem severity scales for the assessment of adolescent alcohol and drug abuse. International Journal of the Addictions 23(1):65-85, 1988.

Meier, Scott. Alcohol education through computer-assisted instruction. Journal of Counseling and Development 66:389-390, April 1988.

Newcomb, Michael, and Bentler, P. Impact of adolescent drug use and social support on problems of young adults: A longitudinal study. Journal of Abnormal Psychology 97(1):64-75, 1988.

Smith, Mickey, and Smith, M. Drug use themes for teachers of health. Journal of Drug Education 18(2):215-228, 1988.

REFERENCES

Battjes, Robert. 1985. Prevention of adolescent drug abuse. *International Journal of the Addictions* 20(6&7):1113-1134.

Baumrind, Diana. 1985. Familial antecedents of adolescent drug use: A developmental perspective In: Jones, C.J., and Battjes, R.J., eds. *Etiology of Drug Abuse: Implications for Prevention*. NIDA Research Monograph 56. Washington, D.C.: US GPO. DHHS Pub (ADM 85-1335). pp. 13-44.

Bell, Catherine, and Battjes, R., eds. 1985. *Prevention Research: Deterring Drug Abuse Among Children and Adolescents*. NIDA Research Monograph 63. Washington, D.C.: US. GPO. DHHS Pub (ADM)85-1334.

Botvin, G.J.; Baker, E.; Botvin, E.; Filazzola, A.D.; and Millman, R.B. 1984a. Prevention of alcohol misuse through the development of personal and social competence: a pilot study. *Journal of Studies on Alcohol* 45(6):550-552.

Botvin, G.J.; Baker, E.: Renick, N.L.; Filazzola, A.D.; and Botvin, E.M. 1984b. A cognitive-behavioral approach to substance abuse prevention. *Addictive Behaviors* 9:137-147.

Botvin, G.J., and Wills, T. 1985. Personal and social skills training: Cognitive-behavioral approaches to substance abuse prevention. In: Bell, Catherine, and Battjes, R., eds. 1985. *Prevention Research: Deterring Drug Abuse Among Children and Adolescents*. NIDA Research Monograph 63. Washington, D.C.: US. GPO. DHHS Pub (ADM)85-1334. pp. 8-49.

Braucht, G.J., and Braucht, B. 1984. Prevention of problem drinking among youth: Evaluation of educational strategies. In: Miller, P., and Nirenberg, T., eds. Prevention of Alcohol Abuse. New York: Plenum Press. pp. 253-280.

Brown, Philip M., and Skiffington, E.W. 1987. Patterns of marijuana and alcohol use attitudes for Pennsylvania 11th graders. *International Journal of the Addictions* 22(6):5467-573.

Donovan, J.E., and Jessor, R. 1983. Problem drinking and the dimension of involvement with drugs. *American Journal of Public Health* 73:543-532.

Glynn, Thomas J., Leukefeld, C.; and Ludford, J., eds. 1983.*Preventing Adolescent Drug Abuse: Intervention Strategies*. NIDA Research Monograph 47. Washington, D.C.: GPO. DHHS Pub (ADM)83-1280.

Goodstadt, M.S. 1986a. Alcohol education research and practice: A logical analysis of the two realities. Journal of Drug Education 16:349-364.

Goodstadt, M.S. 1986b. School-based drug education in North America: What is wrong? What can be done? Journal of School Health 56:278-281.

Goodstadt, M.S. 1987. Prevention strategies for drug abuse. *Issues in Science and Technology* 3(2):28-35.

Halikas, J.A.; Weller, R.A.; Morse, C.L.; and Hoffman, R.G. 1983. Regular marijuana use and its effect on psychosocial variables: A longitudinal study. *Comprehensive Psychiatry* 24:229-235.

Halikas, J.A.; Weller, R.A.; Morse, C.L.; and Hoffman, R.G. 1985. A longitudinal study of marijuana effects. *International Journal of Addiction* 20(5):701-711.

Hansen, William B. 1988. Effective school-based approaches to drug abuse prevention. *Educational Leadership* 45(6):9-14.

Hawkins, J.D.; Lishner, D.; and Catalano, R. 1985. In: Jones, C.J., and Battjes, R.J., eds. *Etiology of Drug Abuse: Implications for Prevention*. NIDA Research Monograph 56. Washington, D.C.: US GPO. DHHS Pub (ADM)85-1335. pp. 75-126.

Hawkins, J. D., and Nederhood, B. 1987. *Handbook for Evaluating Drug and Alcohol Prevention Programs . Staff /Team Evaluation of Prevention Programs (STEPP)*. DHHS Pub (ADM) 87-1512. Washington, D.C.: GPO.

Huba, George, and Bentler, P. 1979. Beginning adolescent drug use and peer and adult interaction patterns. Journal of Consulting and Clinical Psychology 47:265-276.

Jessor, Richard. 1985. Bridging etiology and prevention in drug abuse research. In: Jones, C.J., ed, and Battjes, R.J., eds. *Etiology of Drug Abuse: Implications for Prevention*. NIDA Research Monograph 56. Washington, D.C.: US GPO. DHHS Pub (ADM)85-1335. pp. 257-268.

Jessor, Richard, and Jessor, S.L. 1977. Problem Behavior and Psychosocial Development: A Longitudinal Study of Youth. New York: Academic Press.

Johnston, Lloyd. 1985. The etiology and prevention of substance use: What can we learn from recent historical changes. In: Jones, C.J., and Battjes, R.J., eds. *Etiology of Drug Abuse: Implications for Prevention*. NIDA Research Monograph 56. Washington, D.C.: US GPO. DHHS Pub (ADM)85-1335. pp. 155-177

Jones, C.J., and Battjes, R.J., eds. 1985. *Etiology of Drug Abuse: Implications for Prevention*. NIDA Research Monograph 56. Washington, D.C.: US GPO. DHHS Pub (ADM)85-1335.

Kandel, Denise B., and Andrews, K. 1987. Processes of adolescent socialization by parents and peers. *International Journal of the Addictions* 22(4):319-342.

Kandel, Denise B., and Faust, R. 1975. Sequences and stages in patterns of adolescent drug use. *Archives of General Psychiatry* 32:923-932.

Kandel, Denise B., and Yamaguchi, K. 1985. Developmental patterns of the use of legal, illegal, and medically prescribed psychotropic drugs from adolescence to young adulthood. In: Jones, C.J., and Battjes, R.J., eds. *Etiology of Drug Abuse: Implications for Prevention*. NIDA Research Monograph 56. Washington, D.C.: US GPO. DHHS Pub (ADM)85-1335. pp.193-235.

Kandel, Denise B.; Kessler, R.; and Margulies, R. 1978. Antecedents of adolescents initiation into stages of drug use: A developmental analysis. In: Kandel, D.B., ed. *Longitudinal Research in Drug Use: Empirical Findings and Methodological Issues*. Washington, D.C.: Hemisphere-Wiley. pp. 78-99.

Kinder, Bill; Pape, N.; and Walfish, S. 1980. Drug and alcohol education progrmas: A review of outcome studies.*International Journal of the Addictions* 15(7):1035-1054.

Lohrmann, David K., and Fors, S. 1986. Can school-based educational programs really be expected to solve the adolescent drug abuse problem? *Journal of Drug Education* 16(4):327-329.

Moskowitz, Joel M. 1983. Preventing adolescent substance abuse through drug education. In: Glynn, Thomas; Leukefeld, C.G.; and Ludford, J.P., eds. Preventing Adolescent Drug Abuse: Intervention Strategies. NIDA Research Monograph 47. Washington, D.C.: GPO. DHHS Pub (ADM)83-1280. pp. 233-249.

Moskowitz, Joel M. 1988. The primary prevention of alcohol problems. A critical review of the research literature. *Journal of Studies on Alcohol* , in press.

Murry, D.M., and Perry, C.L. 1985. The prevention of adolescent drug abuse: Implications of etiological, developmental, behavioral, and environmental models. In: Jones, C.J., and Battjes, R.J., eds. *Etiology of Drug Abuse: Implications for Prevention*. NIDA Research Monograph 56. Washington, D.C.: US GPO. DHHS Pub (ADM)85-1335). pp. 236-256.

Perry, Cheryl. 1987. Results of prevention programs with adolescents. Drug and Alcohol Dependence 20:13-19.

Polich, J. Michael; Ellickson, P.; Reuter, P.; and Kahan, J. 1984. *Strategies for Controlling Adolescent Drug Use*. Santa Monica, Calif.: Rand Corporation.

Rhodes, Jean E., and Jason, L. 1987. The retrospective pretest: An alternative approach in evaluating drug prevention programs. Journal of Drug Education 17(4):345-356.

Robins, Lee, and Przybeck, T. 1985. Age of onset of drug use as a factor in drug and other disorders. In: Jones, C.J., and Battjes, R.J., eds. *Etiology of Drug Abuse: Implications for Prevention*. NIDA Research Monograph 56. Washington, D.C.: US GPO. DHHS Pub (ADM)85-1335. pp. 178-193.

Schaps, Eric, et al. 1981. Primary prevention evaluation research: A review of 127 impact studies. *Journal of Drug Issues* 11:17-43.

Schaps, Eric, et al. 1986. Evaluation of seven school-based prevention progrmas: A final report on the Napa Project. *International Journal of the Addictions* 21(9&10):1081-1112.

Schlegal, R.; Manske, S.; and Page, A. 1984. A guided decision making program for elementary school students: A field experiment in alcohol education. In: In: Miller, P., and Nirenberg, T., eds. Prevention of Alcohol Abuse. New York: Plenum Press. pp. 407-439.

Swisher, J.D.; Nesselroade, C.; and Tatanish, C. 1985. Here's looking at you two is looking good: An experimental analysis. Journal of Human and Educatilonal Development 23:111-118.

Tobler, N.S. 1986. Meta-analysis of 143 adolescent drug prevention programs: Quantitative outcome results of program participants compared to a control or comparison group. *Journal of Drug Issues* 16(4):537-567.

United States. Department of Education, in conjunction with US Department of Health and Human Services. 1987. *Report to Congress and the White House on the Nature and Effectiveness of Federal, State, and Local Drug Prevention /Education Programs*. Washington, D.C.: US DoE.

United States. Department of Health and Human Services. 1987. *Drug Abuse and Drug Abuse Research. The Second Trienneial Report to Congress*. Washington, D.C.: GPO. DHHS Pub (ADM)87-1486.

United States. General Accounting Office. 1987. *Drug Abuse Prevention. Further Efforts Needed to Identify Programs that Work*. Washington, D.C.: US GPO, December. GAO/HRD-88-26.

Wallack, Lawrence, and Corbett, K. 1987. Alcohol, tobacco and drug use among youth: Basic issues in prevention. Berkeley, CA: Prevention Research Center, February.

Welte, J.W., and Barnes, G.M. 1985. Alcohol: the gateway to other drug use among secondary school students. *Journal of Youth and Adolescence* 14(6):487-498.

Winick, Charles. 1985. Specific targeting of prevention programs in alcohol and drug dependence. *International Journal of the Addictions* 20(4):527-533.